CLAIMS

1. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, said subscriber server system comprising one or more servers, said one or more servers located locally or distributed across said network, said protocol comprising:

a. a plurality of first communication function transactional verbs, said plurality of first communication function transactional verbs comprising requests from said one or more end user devices to said subscriber server system, said first verbs requesting any of, or a combination of: a change of a state in said server system, a search for data available to said server system, or a server action;

b. a plurality of second communication function transactional verbs, said second communication function transactional verbs comprising replies from said subscriber server system and said one or more end user devices comprising a combination of said first transactional verbs and any of: verb wait, verb accept, verb redirect or verb reject;

c. a plurality of third communication function transactional verbs, said plurality of third communication function transactional verbs comprising parameters for said transactions;

d. said first, second and third communication function transactional verbs operatively concatenated to provide multiple transaction groupings, said groupings providing a communication function between said end user device and said server, and

e. said multiple transaction groupings comprising two or more of: presence, policy, calling functions, address book or messaging functions.

2. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 1, wherein said presence transactional group verbs comprise any of: online, keep alive or offline.

3. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 1, wherein said calling transactional group verbs comprise any of: call, call answer, call started, call terminate, or call ended.

4. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 1, wherein said address book comprises at least a buddy list and said address book transactional group verbs comprise any of: buddy list add, buddy list modify, buddy list remove, buddy list modify all, buddy list status, or buddy list status all.

5. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 4, wherein said subscriber server maintains a master replica of said buddy list and pushes updated lists to said end user devices.

6. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 4, wherein said buddy lists located at said end user device and subscriber server are synchronized by either cookies or calculation and comparison of a buddy list hash value.

7. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 1, wherein said messaging transactional group verbs comprise any of: message available, message get, or message send.

8. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 1, wherein said messaging transactions comprise any of: IM, e-mail, and voice mail.

9. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 1, wherein said policy transactions comprise any of: list of policies, active policy, and policy change (select).

10. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as

per claim 1, wherein said protocol further comprises a transport layer comprising any of: HTTP, TCP, UDP, SSL, IPSEC, XML and TLS.

11. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 10, wherein said HTTP, TCP, SSL, and TLS protocols provide transparency for said multiple transaction groupings to any of: firewalls, NAT, and proxy servers.

12. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 1, wherein said transactions use HTTP security including SSL/TLS for transport level encryption.

13. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 1, wherein said network comprises the Internet and said multiple transaction groupings comprise Internet communication functions.

14. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 13, wherein said Internet communication functions adhere to the Internet Phone Lite specifications.

15. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 1, wherein H.323, SIP, RTP, or H248 requirements are used for call function signaling.

16. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 1, wherein said subscriber server(s) support all of said multiple transaction groupings and said end user device(s) support at least said presence group.

17. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 1, wherein said subscriber server identifies the specific transaction groupings said end user device supports.

18. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 1, wherein said verbs in said calling transaction group further comprise quality of service (QoS) tokens.

19. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 18, wherein said quality of service (QoS) tokens comprise parameters taken from

any of, or a combination of: codecs, packet-loss values, jitter values, delay values, and mean opinion scores.

20. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 18, wherein said quality of service (QoS) tokens are averaged over calling time.

21. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 1, wherein said first transactional verbs comprise at least a set of generic verb header fields including at least a generic verb request comprising at least: transaction ID, alias, location, session ID, and tokens.

22. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 21, wherein said first and second transaction verbs comprise generic verb header fields and generic verb accept header field respectively.

23. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 22, wherein said generic verb accept header field comprises at least: transaction ID, reason transaction is being accepted, reason text, client wait time for refresh, and tokens.

24. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 1, wherein said transactional verbs include at least one of a request verb transaction or an accept reply transaction verb.

25. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 24, wherein said request verb transaction includes a base header comprising at least: transaction ID, alias, location, session ID, and tokens and said accept reply transaction verb base header comprises at least: transaction ID, reason transaction is being accepted, reason text, client wait time for refresh, and tokens.

26. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 1, wherein said end user device resolves a connecting server DNS name to an IP address.

27. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 1, wherein said transactional verbs further comprise error codes.

28. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as

per claim 1, wherein said concatenation follows a pattern of: request - first communication function transactional verbs plus third communication function transactional verbs and reply - first communication function transactional verbs plus second communication function transactional verbs plus third communication function transactional verbs.

29. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, said subscriber server system comprising one or more servers, said one or more servers located locally or distributed across said network, said protocol comprising:

a. a set of generic verb header fields;

b. a plurality of transaction verbs, said transaction verbs comprising specific fields appended to at least one generic verb header field from said set of generic header fields;

c. a first grouping of transaction verbs, said first grouping providing end user device presence information to said subscriber server system;

d. a second grouping of transaction verbs, said second grouping providing call functions between said end user device and one or more remote devices through said subscriber server system;

e. a third grouping of transaction verbs, said third grouping providing messaging functions between said end user device and one or more remote devices through said subscriber server system;

f. a fourth grouping of transaction verbs, said fourth grouping providing address book functions between said end user device and said subscriber server system, and

g. a fifth grouping of transaction verbs, said fifth grouping providing policy functions between said end user device and said subscriber server system.

30. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 29, wherein said presence transaction verbs comprise any of: online, keep alive or offline.

31. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 29, wherein said calling transaction verbs comprise any of: call, call answer, call started, call terminate, or call ended.

32. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 29, wherein said messaging transaction verbs comprise any of: message available, message get, or message send.

33. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 29, wherein said messaging transactions comprise any of: IM, e-mail, and voice mail.

34. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 29, wherein said address book comprises at least a buddy list and said address book transaction verbs include any of: buddy list add, buddy list modify, buddy list remove, buddy list modify all, buddy list status, or buddy list status all.

35. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 29, wherein said policy functions comprise any of: list of policies, active policy, and policy change (select).

36. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 34, wherein said subscriber server maintains a master replica of said buddy list and pushes updated lists to said end user devices.

37. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as

per claim 36, wherein said buddy lists located at said end user device and subscriber server are synchronized by calculation and comparison of a buddy list hash value.

38. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 29, wherein said protocol further comprises a transport layer comprising any of: HTTP, TCP, UDP, SSL, IPSEC, XML and TLS.

39. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 38, wherein said HTTP, TCP, SSL, and TLS protocols provide transparency for said multiple transaction groupings to any of: firewalls, NAT, and proxy servers.

40. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 29, wherein said transactions use HTTP security including SSL/TLS for transport level encryption.

41. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 29, wherein said network comprises the Internet and said first, second, third, fourth, and fifth transaction groupings comprise Internet communication functions.

42. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 41, wherein said Internet communication functions adhere to the Internet Phone Lite specifications.

43. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 29, wherein H.323, SIP, RTP, or H248 requirements are used for call function signaling.

44. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 29, wherein said subscriber server(s) support all of said transaction groupings and said end user device(s) support at least said first group.

45. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 29, wherein said server identifies the specific transaction groupings said end user device supports.

46. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as

per claim 29, wherein said call transaction verbs further comprise quality of service (QoS) tokens.

47. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 46, wherein said quality of service (QoS) tokens comprise parameters taken from any of, or a combination of: codecs, packet-loss values, jitter values, delay values, and mean opinion scores.

48. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 46, wherein said quality of service (QoS) tokens are averaged over calling time.

49. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 29, wherein said set of generic verb header fields includes at least a generic verb request comprising at least: transaction ID, alias, location, session ID, and tokens.

50. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 29, wherein said set of generic verb header fields includes at least a generic verb accept header field.

51. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 50, wherein said generic verb accept header field comprises at least: transaction ID, reason transaction is being accepted, reason text, client wait time for refresh, and tokens.

52. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 29, wherein said transaction verbs include at least a request verb transaction and an accept reply transaction verb.

53. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 52, wherein said request verb transaction includes a base header comprising at least: transaction ID, alias, location, session ID, and tokens and said accept reply transaction verb base header comprises at least: transaction ID, reason transaction is being accepted, reason text, client wait time for refresh, and tokens.

54. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 29, wherein said end user device resolves a connecting server DNS name to an IP address.

55. An communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as per claim 29, wherein said transaction verbs further comprise error codes.

56. A communications system including a protocol providing communication functions over a network, one or more of the elements of said system implemented on one or more servers located across said network, said communications system comprising:

one or more subscriber servers;

a plurality of clients, said clients operatively connected to at least one of said one or more subscriber servers over said network;

a transport protocol operative across said network;

a transaction based verb protocol overlaid on said transport protocol;

said transaction based verb protocol grouped into multiple verb families;

said multiple verb families comprising at least two of the group: presence, policy, calling, messages, and address book.

57. A communications system including a protocol providing communication functions over a network, as per claim 56, wherein said at least two comprises said presence family and one family from the remaining group: calling, policy, messages, and address book.

58. A communication protocol, said protocol enabling a plurality of communication functions between one or more end user devices and a network connected subscriber server system, as

per claim 56, wherein said transport layer comprises any of: HTTP, TCP, UDP, SSL, IPSEC, XML and TLS.

59. A communications system including a protocol providing communication functions over a network, as per claim 56, wherein said multiple verb families comprise all from the group: presence, calling, policy, messages, and address book.

60. An Internet communication system, one or more of the elements of said system implemented between one or more client devices and one or more servers located across said Internet, said communications system comprising:

a subscriber server, said subscriber server comprising one or more connected servers located on said Internet, said subscriber server providing said one or more client devices with Internet communication functions;

a communications protocol comprising a verb based transactional protocol overlaid onto a transport, said communications protocol providing said Internet communication functions between said one or more client devices and said subscriber server, said communications protocol including multiple verb families, and said multiple verb families comprising at least two of the group: presence, policy, calling, messages, and address book.

61. An Internet communication system, as per claim 60, wherein said at least two comprises said presence family and one family from the remaining group: calling, policy, messages, and address book.

62. An Internet communication system, as per claim 60, wherein said multiple verb families comprise all from the group: presence, policy, calling, messages, and address book.

63. An Internet communication system, as per claim 60, wherein said transport layer comprising any of: HTTP, TCP, UDP, SSL, IPSEC, XML and TLS.

64. A communication method providing communication functions over an communication network, one or more steps of said method implemented on one or more servers located across said network, said communications method comprising:

overlaying a communications protocol comprising a plurality of transaction verbs on a transport;

operatively connecting one or more clients to one or more subscriber servers, said clients operatively connected to at least one of said one or more subscriber servers over said network using said communications protocol;

selecting a series of correlating transaction based verbs from said communications protocol based on a desired communication function;

said transaction based verbs grouped into multiple verb families based on said desired communication function, and

said multiple verb families comprising at least two of the group: presence, policy, calling, messages, and address book.

65. A communication method providing communication functions over a communication network, as per claim 64, wherein said at least two comprises said presence family and one family from the remaining group: calling, policy, messages, and address book.

66. A communication method providing communication functions over an communication network, as per claim 64, wherein said multiple verb families comprise all from the group: presence, policy, calling, messages, and address book.

67. A communication protocol, said protocol enabling a plurality of communication services across a network, said protocol comprising:

a. a plurality of first communication function transactional verbs, said plurality of first communication function transactional verbs comprising requests for communication services, said first verbs each comprising a generic verb header and one or more parameters for specified transactions;

b. a plurality of second communication function transactional verbs comprising responses to said first communication function transactional verbs, said responses comprising a combination of said first communication function transactional verbs and any of: verb wait, verb accept, verb redirect or verb reject, and one or more parameters for specified transactions;

c. said first and second communication function transactional verbs operative to provide multiple transaction groupings, said groupings providing said communication services between a requestor and responder, and

d. said multiple transaction groupings comprising two or more of: presence, policy, calling functions, address book or messaging functions.